

SEQUENCE LISTING

<110> HOFFMAN, STEPHEN L.
LIANG, HONG
SIM, KIM LEE

<120> DNA SEQUENCES, PEPTIDES, ANTIBODIES AND VACCINES FOR
PREVENTION AND TREATMENT OF SARS

<130> PP953

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<141> 2005-12-23

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<151> 2004-06-24

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<170> PatentIn Ver. 3.3

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<210> 6

<211> 2421

<212> DNA

<213> SARS Coronavirus urbani

<400> 6

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<210> 7

<211> 807

<212> PRT

<213> SARS Coronavirus urbani

<400> 7

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Ala Val Asp Cys Ser Gln Asn Pro Leu Ala Glu Leu Lys Cys Ser Val
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Lys Ser Phe Glu Ile Asp Lys Gly Ile Tyr Gln Thr Ser Asn Phe Arg
      20                      25                      30

Val Val Pro Ser Gly Asp Val Val Arg Phe Pro Asn Ile Thr Asn Leu
      35                      40                      45

Cys Pro Phe Gly Glu Val Phe Asn Ala Thr Lys Phe Pro Ser Val Tyr
      50                      55                      60

Ala Trp Glu Arg Lys Lys Ile Ser Asn Cys Val Ala Asp Tyr Ser Val
      65                      70                      75                      80

Leu Tyr Asn Ser Thr Phe Phe Ser Thr Phe Lys Cys Tyr Gly Val Ser
      85                      90                      95

Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala Asp Ser
      100                      105                      110

Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly Gln Thr
      115                      120                      125

Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Met Gly
      130                      135                      140

Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser Thr Gly
      145                      150                      155                      160

Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu Arg Pro
      165                      170                      175

Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly Lys Pro
      180                      185                      190

Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp Tyr Gly
      195                      200                      205

Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr Arg Val Val Val
      210                      215                      220

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Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly Pro Lys
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 Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn Phe Asn
 245 250 255
 Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg Phe Gln
 260 265 270
 Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp Ser Val
 275 280 285
 Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys Ser Phe
 290 295 300
 Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ser Ser Glu Val
 305 310 315 320
 Ala Val Leu Tyr Gln Asp Val Asn Cys Thr Asp Val Ser Thr Ala Ile
 325 330 335
 His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr Ser Thr Gly Asn
 340 345 350
 Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly Ala Glu His Val
 355 360 365
 Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala Gly Ile Cys Ala
 370 375 380
 Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser Gln Lys Ser Ile
 385 390 395 400
 Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser Ile Ala Tyr Ser
 405 410 415
 Asn Asn Thr Ile Ala Ile Pro Thr Asn Phe Ser Ile Ser Ile Thr Thr
 420 425 430
 Glu Val Met Pro Val Ser Met Ala Lys Thr Ser Val Asp Cys Asn Met
 435 440 445
 Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ala Asn Leu Leu Leu Gln Tyr
 450 455 460
 Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Ser Gly Ile Ala Ala
 465 470 475 480
 Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys Gln Met
 485 490 495
 Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe Ser Gln
 500 505 510
 Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile Glu Asp
 515 520 525

Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys Gln
 530 535 540
 Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys Ala
 545 550 555 560
 Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp Asp
 565 570 575
 Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr Ala
 580 585 590
 Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala Met
 595 600 605
 Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val Leu
 610 615 620
 Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser
 625 630 635 640
 Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu
 645 650 655
 Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys
 660 665 670
 Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile
 675 680 685
 Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu
 690 695 700
 Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln Leu
 705 710 715 720
 Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr Lys
 725 730 735
 Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys Gly
 740 745 750
 Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly Val
 755 760 765
 Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn Phe Thr
 770 775 780
 Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro Arg Glu
 785 790 795 800
 Gly Val Phe Val Phe Asn Gly
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<210> 8

<211> 248

<212> PRT

<213> SARS Coronavirus urbani

<400> 8

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Val Leu Tyr Asn Ser Ala Phe Phe Ser Thr Phe Lys Cys Tyr Gly Val
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Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala Asp
      20              25              30

Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly Gln
      35              40              45

Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Met
      50              55              60

Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser Thr
      65              70              75              80

Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu Arg
      85              90              95

Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly Lys
      100             105             110

Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp Tyr
      115             120             125

Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr Arg Val Val
      130             135             140

Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly Pro
      145             150             155             160

Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn Phe
      165             170             175

Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg Phe
      180             185             190

Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp Ser
      195             200             205

Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys Ser
      210             215             220

Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ala Ser Glu
      225             230             235             240

Val Ala Val Leu Tyr Gln Asp Val
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<210> 9
<211> 278
<212> PRT
<213> SARS Coronavirus urbani
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<400> 9
Ala Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys Gln
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Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe Ala
20 25 30
Gln Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile Glu
35 40 45
Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys
50 55 60
Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys
65 70 75 80
Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp
85 90 95
Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr
100 105 110
Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala
115 120 125
Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
130 135 140
Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
145 150 155 160
Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
165 170 175
Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
180 185 190
Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
195 200 205
Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
210 215 220
Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
225 230 235 240
Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
245 250 255
Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys
260 265 270

Gly Lys Gly Tyr His Leu
275

<210> 10

<211> 678

<212> PRT

<213> SARS Coronavirus urbani

<400> 10

Val	Leu	Tyr	Asn	Ser	Ala	Phe	Phe	Ser	Thr	Phe	Lys	Cys	Tyr	Gly	Val
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Ser	Ala	Thr	Lys	Leu	Asn	Asp	Leu	Cys	Phe	Ser	Asn	Val	Tyr	Ala	Asp
			20					25					30		

Ser	Phe	Val	Val	Lys	Gly	Asp	Asp	Val	Arg	Gln	Ile	Ala	Pro	Gly	Gln
		35					40					45			

Thr	Gly	Val	Ile	Ala	Asp	Tyr	Asn	Tyr	Lys	Leu	Pro	Asp	Asp	Phe	Met
	50					55					60				

Gly	Cys	Val	Leu	Ala	Trp	Asn	Thr	Arg	Asn	Ile	Asp	Ala	Thr	Ser	Thr
65					70					75					80

Gly	Asn	Tyr	Asn	Tyr	Lys	Tyr	Arg	Tyr	Leu	Arg	His	Gly	Lys	Leu	Arg
			85						90					95	

Pro	Phe	Glu	Arg	Asp	Ile	Ser	Asn	Val	Pro	Phe	Ser	Pro	Asp	Gly	Lys
			100					105					110		

Pro	Cys	Thr	Pro	Pro	Ala	Leu	Asn	Cys	Tyr	Trp	Pro	Leu	Asn	Asp	Tyr
		115					120					125			

Gly	Phe	Tyr	Thr	Thr	Thr	Gly	Ile	Gly	Tyr	Gln	Pro	Tyr	Arg	Val	Val
	130					135					140				

Val	Leu	Ser	Phe	Glu	Leu	Leu	Asn	Ala	Pro	Ala	Thr	Val	Cys	Gly	Pro
145					150					155					160

Lys	Leu	Ser	Thr	Asp	Leu	Ile	Lys	Asn	Gln	Cys	Val	Asn	Phe	Asn	Phe
				165					170					175	

Asn	Gly	Leu	Thr	Gly	Thr	Gly	Val	Leu	Thr	Pro	Ser	Ser	Lys	Arg	Phe
		180						185					190		

Gln	Pro	Phe	Gln	Gln	Phe	Gly	Arg	Asp	Val	Ser	Asp	Phe	Thr	Asp	Ser
		195					200					205			

Val	Arg	Asp	Pro	Lys	Thr	Ser	Glu	Ile	Leu	Asp	Ile	Ser	Pro	Cys	Ser
	210					215					220				

Phe	Gly	Gly	Val	Ser	Val	Ile	Thr	Pro	Gly	Thr	Asn	Ala	Ala	Ser	Glu
225					230					235					240

Val	Ala	Val	Leu	Tyr	Gln	Asp	Val	Ala	Cys	Thr	Asp	Val	Ser	Thr	Ala
			245						250					255	

Ile His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr Ser Thr Gly
 260 265 270
 Asn Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly Ala Glu His
 275 280 285
 Val Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala Gly Ile Cys
 290 295 300
 Ala Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser Gln Lys Ser
 305 310 315 320
 Ile Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser Ile Ala Tyr
 325 330 335
 Ser Ala Asn Thr Ile Ala Ile Pro Thr Asn Phe Ala Ile Ser Ile Thr
 340 345 350
 Thr Glu Val Met Pro Val Ser Met Ala Lys Thr Ser Val Asp Cys Asn
 355 360 365
 Met Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ala Asn Leu Leu Leu Gln
 370 375 380
 Tyr Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Ser Gly Ile Ala
 385 390 395 400
 Ala Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys Gln
 405 410 415
 Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe Ala
 420 425 430
 Gln Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile Glu
 435 440 445
 Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys
 450 455 460
 Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys
 465 470 475 480
 Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp
 485 490 495
 Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr
 500 505 510
 Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala
 515 520 525
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 530 535 540
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 545 550 555 560

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<210> 11
<211> 248
<212> PRT
<213> SARS Coronavirus urbani
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<400> 11
Val Leu Tyr Asn Ser Thr Phe Phe Ser Thr Phe Lys Cys Tyr Gly Val
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Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala Asp
      20                25                30

Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly Gln
      35                40                45

Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Met
  50                55                60

Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser Thr
  65                70                75                80

Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu Arg
      85                90                95

Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly Lys
      100                105                110

Pro Cys Thr Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp Tyr
      115                120                125

Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr Arg Val Val
      130                135                140

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Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly Pro
145 150 155 160

Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn Phe
165 170 175

Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg Phe
180 185 190

Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp Ser
195 200 205

Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys Ser
210 215 220

Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ser Ser Glu
225 230 235 240

Val Ala Val Leu Tyr Gln Asp Val
245

<210> 12

<211> 278

<212> PRT

<213> SARS Coronavirus urbani

<400> 12

Ala Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys Gln
1 5 10 15

Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe Ser
20 25 30

Gln Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile Glu
35 40 45

Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys
50 55 60

Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys
65 70 75 80

Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp
85 90 95

Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr
100 105 110

Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala
115 120 125

Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
130 135 140

Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
145 150 155 160

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<210> 13
<211> 678
<212> PRT
<213> SARS Coronavirus urbani
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<400> 13																
Val	Leu	Tyr	Asn	Ser	Thr	Phe	Phe	Ser	Thr	Phe	Lys	Cys	Tyr	Gly	Val	
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Ser	Ala	Thr	Lys	Leu	Asn	Asp	Leu	Cys	Phe	Ser	Asn	Val	Tyr	Ala	Asp	
			20					25					30			
Ser	Phe	Val	Val	Lys	Gly	Asp	Asp	Val	Arg	Gln	Ile	Ala	Pro	Gly	Gln	
		35					40					45				
Thr	Gly	Val	Ile	Ala	Asp	Tyr	Asn	Tyr	Lys	Leu	Pro	Asp	Asp	Phe	Met	
	50					55					60					
Gly	Cys	Val	Leu	Ala	Trp	Asn	Thr	Arg	Asn	Ile	Asp	Ala	Thr	Ser	Thr	
65					70					75					80	
Gly	Asn	Tyr	Asn	Tyr	Lys	Tyr	Arg	Tyr	Leu	Arg	His	Gly	Lys	Leu	Arg	
				85					90					95		
Pro	Phe	Glu	Arg	Asp	Ile	Ser	Asn	Val	Pro	Phe	Ser	Pro	Asp	Gly	Lys	
			100					105					110			
Pro	Cys	Thr	Pro	Pro	Ala	Leu	Asn	Cys	Tyr	Trp	Pro	Leu	Asn	Asp	Tyr	
		115					120					125				
Gly	Phe	Tyr	Thr	Thr	Thr	Gly	Ile	Gly	Tyr	Gln	Pro	Tyr	Arg	Val	Val	
	130					135					140					

Val	Leu	Ser	Phe	Glu	Leu	Leu	Asn	Ala	Pro	Ala	Thr	Val	Cys	Gly	Pro	145	150	155	160
Lys	Leu	Ser	Thr	Asp	Leu	Ile	Lys	Asn	Gln	Cys	Val	Asn	Phe	Asn	Phe	165	170	175	
Asn	Gly	Leu	Thr	Gly	Thr	Gly	Val	Leu	Thr	Pro	Ser	Ser	Lys	Arg	Phe	180	185	190	
Gln	Pro	Phe	Gln	Gln	Phe	Gly	Arg	Asp	Val	Ser	Asp	Phe	Thr	Asp	Ser	195	200	205	
Val	Arg	Asp	Pro	Lys	Thr	Ser	Glu	Ile	Leu	Asp	Ile	Ser	Pro	Cys	Ser	210	215	220	
Phe	Gly	Gly	Val	Ser	Val	Ile	Thr	Pro	Gly	Thr	Asn	Ala	Ser	Ser	Glu	225	230	235	240
Val	Ala	Val	Leu	Tyr	Gln	Asp	Val	Asn	Cys	Thr	Asp	Val	Ser	Thr	Ala	245	250	255	
Ile	His	Ala	Asp	Gln	Leu	Thr	Pro	Ala	Trp	Arg	Ile	Tyr	Ser	Thr	Gly	260	265	270	
Asn	Asn	Val	Phe	Gln	Thr	Gln	Ala	Gly	Cys	Leu	Ile	Gly	Ala	Glu	His	275	280	285	
Val	Asp	Thr	Ser	Tyr	Glu	Cys	Asp	Ile	Pro	Ile	Gly	Ala	Gly	Ile	Cys	290	295	300	
Ala	Ser	Tyr	His	Thr	Val	Ser	Leu	Leu	Arg	Ser	Thr	Ser	Gln	Lys	Ser	305	310	315	320
Ile	Val	Ala	Tyr	Thr	Met	Ser	Leu	Gly	Ala	Asp	Ser	Ser	Ile	Ala	Tyr	325	330	335	
Ser	Asn	Asn	Thr	Ile	Ala	Ile	Pro	Thr	Asn	Phe	Ser	Ile	Ser	Ile	Thr	340	345	350	
Thr	Glu	Val	Met	Pro	Val	Ser	Met	Ala	Lys	Thr	Ser	Val	Asp	Cys	Asn	355	360	365	
Met	Tyr	Ile	Cys	Gly	Asp	Ser	Thr	Glu	Cys	Ala	Asn	Leu	Leu	Leu	Gln	370	375	380	
Tyr	Gly	Ser	Phe	Cys	Thr	Gln	Leu	Asn	Arg	Ala	Leu	Ser	Gly	Ile	Ala	385	390	395	400
Ala	Glu	Gln	Asp	Arg	Asn	Thr	Arg	Glu	Val	Phe	Ala	Gln	Val	Lys	Gln	405	410	415	
Met	Tyr	Lys	Thr	Pro	Thr	Leu	Lys	Tyr	Phe	Gly	Gly	Phe	Asn	Phe	Ser	420	425	430	
Gln	Ile	Leu	Pro	Asp	Pro	Leu	Lys	Pro	Thr	Lys	Arg	Ser	Phe	Ile	Glu	435	440	445	

Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys
 450 455 460
 Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys
 465 470 475 480
 Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp
 485 490 495
 Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr
 500 505 510
 Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala
 515 520 525
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 530 535 540
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 545 550 555 560
 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 565 570 575
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
 580 585 590
 Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
 595 600 605
 Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
 610 615 620
 Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
 625 630 635 640
 Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
 645 650 655
 Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys
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 Gly Lys Gly Tyr His Leu
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<210> 14

<211> 757

<212> PRT

<213> SARS Coronavirus urbani

<400> 14

Ala Val Asp Cys Ser Gln Asn Pro Leu Ala Glu Leu Lys Cys Ser Val
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 Lys Ser Phe Glu Ile Asp Lys Gly Ile Tyr Gln Thr Ser Asn Phe Arg
 20 25 30

Val	Val	Pro	Ser	Gly	Asp	Val	Val	Arg	Phe	Pro	Asn	Ile	Thr	Asn	Leu
		35					40					45			
Cys	Pro	Phe	Gly	Glu	Val	Phe	Asn	Ala	Thr	Lys	Phe	Pro	Ser	Val	Tyr
	50					55					60				
Ala	Trp	Glu	Arg	Lys	Lys	Ile	Ser	Asn	Cys	Val	Ala	Asp	Tyr	Ser	Val
65					70					75					80
Leu	Tyr	Asn	Ser	Thr	Phe	Phe	Ser	Thr	Phe	Lys	Cys	Tyr	Gly	Val	Ser
				85					90					95	
Ala	Thr	Lys	Leu	Asn	Asp	Leu	Cys	Phe	Ser	Asn	Val	Tyr	Ala	Asp	Ser
			100					105					110		
Phe	Val	Val	Lys	Gly	Asp	Asp	Val	Arg	Gln	Ile	Ala	Pro	Gly	Gln	Thr
		115					120					125			
Gly	Val	Ile	Ala	Asp	Tyr	Asn	Tyr	Lys	Leu	Pro	Asp	Asp	Phe	Met	Gly
	130					135					140				
Cys	Val	Leu	Ala	Trp	Asn	Thr	Arg	Asn	Ile	Asp	Ala	Thr	Ser	Thr	Gly
145					150					155					160
Asn	Tyr	Asn	Tyr	Lys	Tyr	Arg	Tyr	Leu	Arg	His	Gly	Lys	Leu	Arg	Pro
				165					170					175	
Phe	Glu	Arg	Asp	Ile	Ser	Asn	Val	Pro	Phe	Ser	Pro	Asp	Gly	Lys	Pro
			180					185					190		
Cys	Thr	Pro	Pro	Ala	Leu	Asn	Cys	Tyr	Trp	Pro	Leu	Asn	Asp	Tyr	Gly
		195					200					205			
Phe	Tyr	Thr	Thr	Thr	Gly	Ile	Gly	Tyr	Gln	Pro	Tyr	Arg	Val	Val	Val
	210					215					220				
Leu	Ser	Phe	Glu	Leu	Leu	Asn	Ala	Pro	Ala	Thr	Val	Cys	Gly	Pro	Lys
225					230					235					240
Leu	Ser	Thr	Asp	Leu	Ile	Lys	Asn	Gln	Cys	Val	Asn	Phe	Asn	Phe	Asn
				245					250					255	
Gly	Leu	Thr	Gly	Thr	Gly	Val	Leu	Thr	Pro	Ser	Ser	Lys	Arg	Phe	Gln
			260					265					270		
Pro	Phe	Gln	Gln	Phe	Gly	Arg	Asp	Val	Ser	Asp	Phe	Thr	Asp	Ser	Val
		275					280					285			
Arg	Asp	Pro	Lys	Thr	Ser	Glu	Ile	Leu	Asp	Ile	Ser	Pro	Cys	Ser	Phe
	290					295					300				
Gly	Gly	Val	Ser	Val	Ile	Thr	Pro	Gly	Thr	Asn	Ala	Ser	Ser	Glu	Val
305					310					315					320
Ala	Val	Leu	Tyr	Gln	Asp	Val	Asn	Cys	Thr	Asp	Val	Ser	Thr	Ala	Ile
				325					330					335	

His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr Ser Thr Gly Asn
 340 345 350
 Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly Ala Glu His Val
 355 360 365
 Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala Gly Ile Cys Ala
 370 375 380
 Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser Gln Lys Ser Ile
 385 390 395 400
 Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser Ile Ala Tyr Ser
 405 410 415
 Asn Asn Thr Ile Ala Ile Pro Thr Asn Phe Ser Ile Ser Ile Thr Thr
 420 425 430
 Glu Val Met Pro Val Ser Met Ala Lys Thr Ser Val Asp Cys Asn Met
 435 440 445
 Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ala Asn Leu Leu Leu Gln Tyr
 450 455 460
 Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Ser Gly Ile Ala Ala
 465 470 475 480
 Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys Gln Met
 485 490 495
 Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe Ser Gln
 500 505 510
 Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile Glu Asp
 515 520 525
 Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys Gln
 530 535 540
 Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys Ala
 545 550 555 560
 Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp Asp
 565 570 575
 Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr Ala
 580 585 590
 Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala Met
 595 600 605
 Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val Leu
 610 615 620
 Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser
 625 630 635 640

Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu
 645 650 655
 Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys
 660 665 670
 Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile
 675 680 685
 Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu
 690 695 700
 Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln Leu
 705 710 715 720
 Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr Lys
 725 730 735
 Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys Gly
 740 745 750
 Lys Gly Tyr His Leu
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<210> 15
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 15
 tcgctcgaga aaagagtgtct ctacaactca gcattt

36

<210> 16
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 16
 atctctagat taaacatctt gatatagaac agc

33

<210> 17
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 17

tcgctcgaga aaagagctga acaggatcgc aacaca

36

<210> 18

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 18

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30

<210> 19

<211> 2421

<212> DNA

<213> SARS Coronavirus urbani

<400> 19

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cgcttcccaa acatcgccaa cctgtgcccc ttccggcgagg tggtcgcgcg caccaagttc 180
ccatccgtgt acgcttggga gcgcaagaag atctccaact gcgtggccga ctactccgtg 240
ctgtacaact ccgcttctt ctccaccttc aagtgtacg gcgtgtccgc caccaagctg 300
aacgacctgt gcttctccaa cgtgtacgcc gactccttcg tggagaaggg cgacgacgtg 360
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gacttcatgg gctgcgtgct ggcttggaa acccgcaaca tcgacgccac ctccaccggc 480
aactacaact acaagtaccg ctacctgcgc caccgcaagc tgcgccatt cgagcgcgac 540
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tactggccac tgaacgacta cggttcttac accaccaccg gcatcggcta ccagccatac 660
cgcggtggtg tgctgtcctt cgagctgctg aacgccccag ccaccgtgtg cggcccaaag 720
ctgtccaccg acctgatcaa gaaccagtgc gtgaacttca acttcaacgg cctgaccggc 780
accggcggtc tgaccccatc ctccaagcgc ttccagccat tccagcagtt cggccgcgac 840
gtgtccgact tcaccgactc cgtgcgcgac ccaaagacct ccgagatcct ggacatctcc 900
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cagaagttca acggcctgac cgtgctgcca cactgctga ccgacgacat gatcgccgcc 1740
tacaccgccg cctggtgtc cggcaccgcc accgcgggt ggaccttcg cgccggcgcc 1800
gccctgcaga tccattcgc catgcagatg gctaccgct tcaacggcat cggcgtgacc 1860

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cagaacgtgc tgtacgagaa ccagaagcag atcgccaacc agttcaacaa ggccatctcc 1920
cagatccagg agtccctgac caccacctcc accgccctgg gcaagctgca ggacgtggtg 1980
aaccagaacg cccaggccct gaacaccttg gtgaagcagc tgcctccaa cttcggcgcc 2040
atctcctccg tgetgaacga catcctgtcc cgcctggaca aggtggaggc cgaggtgcag 2100
atcgaccgcc tgatcaccgg ccgcctgcag tccctgcaga cctacgtgac ccagcagctg 2160
atccgcgccc ccgagatccg cgcctccgcc aacctggccg ccaccaagat gtccgagtgc 2220
gtgctggggc agtccaagcg cgtggacttc tgcggcaagg gctaccacct gatgtccttc 2280
ccacaggccg cccacacacg cgtggtgttc ctgcacgtga cctacgtgcc atcccaggag 2340
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<210> 20

<211> 807

<212> PRT

<213> SARS Coronavirus urbani

<400> 20

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Ala Val Asp Cys Ser Gln Asn Pro Leu Ala Glu Leu Lys Cys Ser Val
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Lys Ser Phe Glu Ile Asp Lys Gly Ile Tyr Gln Thr Ser Asn Phe Arg
          20              25              30

Val Val Pro Ser Gly Asp Val Val Arg Phe Pro Asn Ile Ala Asn Leu
          35              40              45

Cys Pro Phe Gly Glu Val Phe Ala Ala Thr Lys Phe Pro Ser Val Tyr
          50              55              60

Ala Trp Glu Arg Lys Lys Ile Ser Asn Cys Val Ala Asp Tyr Ser Val
          65              70              75              80

Leu Tyr Asn Ser Ala Phe Phe Ser Thr Phe Lys Cys Tyr Gly Val Ser
          85              90              95

Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala Asp Ser
          100             105             110

Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly Gln Thr
          115             120             125

Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Met Gly
          130             135             140

Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser Thr Gly
          145             150             155             160

Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu Arg Pro
          165             170             175

Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly Lys Pro
          180             185             190

Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp Tyr Gly
          195             200             205

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Phe	Tyr	Thr	Thr	Thr	Gly	Ile	Gly	Tyr	Gln	Pro	Tyr	Arg	Val	Val	Val			
210						215					220							
Leu	Ser	Phe	Glu	Leu	Leu	Asn	Ala	Pro	Ala	Thr	Val	Cys	Gly	Pro	Lys			
225					230					235					240			
Leu	Ser	Thr	Asp	Leu	Ile	Lys	Asn	Gln	Cys	Val	Asn	Phe	Asn	Phe	Asn			
				245					250					255				
Gly	Leu	Thr	Gly	Thr	Gly	Val	Leu	Thr	Pro	Ser	Ser	Lys	Arg	Phe	Gln			
			260					265					270					
Pro	Phe	Gln	Gln	Phe	Gly	Arg	Asp	Val	Ser	Asp	Phe	Thr	Asp	Ser	Val			
		275					280					285						
Arg	Asp	Pro	Lys	Thr	Ser	Glu	Ile	Leu	Asp	Ile	Ser	Pro	Cys	Ser	Phe			
	290					295					300							
Gly	Gly	Val	Ser	Val	Ile	Thr	Pro	Gly	Thr	Asn	Ala	Ala	Ser	Glu	Val			
305					310					315					320			
Ala	Val	Leu	Tyr	Gln	Asp	Val	Ala	Cys	Thr	Asp	Val	Ser	Thr	Ala	Ile			
				325					330					335				
His	Ala	Asp	Gln	Leu	Thr	Pro	Ala	Trp	Arg	Ile	Tyr	Ser	Thr	Gly	Asn			
		340						345					350					
Asn	Val	Phe	Gln	Thr	Gln	Ala	Gly	Cys	Leu	Ile	Gly	Ala	Glu	His	Val			
		355					360					365						
Asp	Thr	Ser	Tyr	Glu	Cys	Asp	Ile	Pro	Ile	Gly	Ala	Gly	Ile	Cys	Ala			
	370					375					380							
Ser	Tyr	His	Thr	Val	Ser	Leu	Leu	Arg	Ser	Thr	Ser	Gln	Lys	Ser	Ile			
385					390					395					400			
Val	Ala	Tyr	Thr	Met	Ser	Leu	Gly	Ala	Asp	Ser	Ser	Ile	Ala	Tyr	Ser			
				405					410					415				
Ala	Asn	Thr	Ile	Ala	Ile	Pro	Thr	Asn	Phe	Ala	Ile	Ser	Ile	Thr	Thr			
			420					425					430					
Glu	Val	Met	Pro	Val	Ser	Met	Ala	Lys	Thr	Ser	Val	Asp	Cys	Asn	Met			
		435					440					445						
Tyr	Ile	Cys	Gly	Asp	Ser	Thr	Glu	Cys	Ala	Asn	Leu	Leu	Leu	Gln	Tyr			
	450					455					460							
Gly	Ser	Phe	Cys	Thr	Gln	Leu	Asn	Arg	Ala	Leu	Ser	Gly	Ile	Ala	Ala			
465					470					475					480			
Glu	Gln	Asp	Arg	Asn	Thr	Arg	Glu	Val	Phe	Ala	Gln	Val	Lys	Gln	Met			
				485					490					495				
Tyr	Lys	Thr	Pro	Thr	Leu	Lys	Tyr	Phe	Gly	Gly	Phe	Asn	Phe	Ala	Gln			
			500					505					510					

Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile Glu Asp
 515 520 525
 Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys Gln
 530 535 540
 Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys Ala
 545 550 555 560
 Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp Asp
 565 570 575
 Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr Ala
 580 585 590
 Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala Met
 595 600 605
 Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val Leu
 610 615 620
 Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser
 625 630 635 640
 Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu
 645 650 655
 Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys
 660 665 670
 Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile
 675 680 685
 Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu
 690 695 700
 Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln Leu
 705 710 715 720
 Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr Lys
 725 730 735
 Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys Gly
 740 745 750
 Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly Val
 755 760 765
 Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn Phe Ala
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 Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro Arg Glu
 785 790 795 800
 Gly Val Phe Val Phe Asn Gly
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<210> 21
 <211> 744
 <212> DNA
 <213> SARS Coronavirus urbani

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<400> 21
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gtgcgccaga tcgccccagg ccagaccggc gtgatcgccg actacaacta caagctgccca 180
gacgacttca tgggctgcgt gctggcctgg aacaccgcga acatcgacgc cacctccacc 240
ggcaactaca actacaagta ccgctacctg cgccacggca agctgcgccc attcgagcgc 300
gacatctcca acgtgccatt ctccccagac ggcaagccat gcaccccacc agccctgaac 360
tgctactggc cactgaacga ctacggcttc tacaccacca ccggcatcgg ctaccagcca 420
taccgcgtgg tgggtgtgtc cttcgagctg ctgaacgccc cagccaccgt gtgcggccca 480
aagctgtcca ccgacctgat caagaaccag tgcgtgaact tcaacttcaa cggcctgacc 540
ggcaccggcg tgctgacccc atcctccaag cgcttcacgc cattccagca gttcggccgc 600
gacgtgtccg acttcaccga ctccgtgcgc gacccaaaga cctccgagat cctggacatc 660
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<210> 22
 <211> 248
 <212> PRT
 <213> SARS Coronavirus urbani

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<400> 22
Val Leu Tyr Asn Ser Ala Phe Phe Ser Thr Phe Lys Cys Tyr Gly Val
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Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala Asp
      20              25              30

Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly Gln
      35              40              45

Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Met
      50              55              60

Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser Thr
      65              70              75              80

Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu Arg
      85              90              95

Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly Lys
      100             105             110

Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp Tyr
      115             120             125

Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr Arg Val Val
      130             135             140

Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly Pro
      145             150             155             160
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Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn Phe
 165 170 175
 Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg Phe
 180 185 190
 Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp Ser
 195 200 205
 Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys Ser
 210 215 220
 Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ala Ser Glu
 225 230 235 240
 Val Ala Val Leu Tyr Gln Asp Val
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<210> 23
 <211> 834
 <212> DNA
 <213> SARS Coronavirus urbani

<400> 23
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 ccaaccaagc gctccttcat cgaggacctg ctgttcaaca aggtgacctt ggccgacgcc 180
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 <213> SARS Coronavirus urbani

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 35 40 45
 Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys
 50 55 60

Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys
 65 70 75 80
 Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp
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 Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr
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 Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala
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 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 165 170 175
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
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 Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
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 Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
 210 215 220
 Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
 225 230 235 240
 Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
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<211> 2034

<212> DNA

<213> SARS Coronavirus urbani

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<211> 678

<212> PRT

<213> SARS Coronavirus urbani

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Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly Gln
      35                      40                      45

Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Met
      50                      55                      60

Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser Thr
      65                      70                      75                      80

Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu Arg
      85                      90                      95

Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly Lys
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Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp Tyr
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 Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly Pro
 145 150 155 160
 Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn Phe
 165 170 175
 Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg Phe
 180 185 190
 Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp Ser
 195 200 205
 Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys Ser
 210 215 220
 Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ala Ser Glu
 225 230 235 240
 Val Ala Val Leu Tyr Gln Asp Val Ala Cys Thr Asp Val Ser Thr Ala
 245 250 255
 Ile His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr Ser Thr Gly
 260 265 270
 Asn Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly Ala Glu His
 275 280 285
 Val Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala Gly Ile Cys
 290 295 300
 Ala Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser Gln Lys Ser
 305 310 315 320
 Ile Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser Ile Ala Tyr
 325 330 335
 Ser Ala Asn Thr Ile Ala Ile Pro Thr Asn Phe Ala Ile Ser Ile Thr
 340 345 350
 Thr Glu Val Met Pro Val Ser Met Ala Lys Thr Ser Val Asp Cys Asn
 355 360 365
 Met Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ala Asn Leu Leu Leu Gln
 370 375 380
 Tyr Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Ser Gly Ile Ala
 385 390 395 400
 Ala Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys Gln
 405 410 415
 Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe Ala
 420 425 430

Gln Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile Glu
 435 440 445
 Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met Lys
 450 455 460
 Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile Cys
 465 470 475 480
 Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr Asp
 485 490 495
 Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala Thr
 500 505 510
 Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala
 515 520 525
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 530 535 540
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 545 550 555 560
 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 565 570 575
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
 580 585 590
 Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
 595 600 605
 Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
 610 615 620
 Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
 625 630 635 640
 Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
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 Gly Lys Gly Tyr His Leu
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